
पशु आहार के रूप में विलायक निष्कर्षित
नाइजर बीज की खली — विशिष्टि
(पहला पुनरीक्षण)

**Solvent Extracted Nigerseed
Oilcake (Meal) as Livestock Feed —
Specification**
(*First Revision*)

ICS 65.120

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Animal Husbandry, Feeds and Equipment Sectional Committee had been approved by the Food and Agriculture Division Council.

Solvent extracted nigerseed oilcake (meal) provides a rich source of protein and may be used as a protein supplement in livestock rations. In order that the extracted oilcakes (meals) are fit for use for feeding livestock, it is essential that they contain the necessary nutrients. Therefore, to assist the industry to manufacture extracted oilcakes (meals) of a proper quality for feeding livestock, this standard was formulated.

This standard was published in 1970. In this revision, the standard has been updated considering latest technological developments and manufacturing practices. Following major changes have been made in this revision:

- a) Grade 2 has been removed considering its poor quality and non-availability in the market.
- b) Requirement for aflatoxin B1 has been introduced in the standard.
- c) Methods of tests prescribed for determination of crude protein, crude fat, crude fibre and acid insoluble ash have been updated.

The composition of the Committee responsible for formulation of the standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 :2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SOLVENT EXTRACTED NIGERSEED OILCAKE (MEAL) AS
LIVESTOCK FEED — SPECIFICATION

(First Revision)

1 SCOPE

This Standard prescribes the requirements and the methods of sampling and test for solvent extracted nigerseed oilcake (meal) used in livestock feeding.

2. REFERENCES

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water (<i>third revision</i>)
1712 :	Cottonseed oilcake as livestock feed ingredient — Specification (<i>third revision</i>)
2052 : 2009	Compounded feeds for cattle — Specification (<i>fourth revision</i>)
3470 :	Hexane, food grade — Specification (<i>second revision</i>)
7874 (Part 1) : 1975	Methods of tests for animal feeds and feeding stuffs: Part 1 General methods
IS/ISO 5983 (Part 1) : 2005	Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 1 Kjeldahl method
5983 (Part 2) : 2021/ISO 5983-2 : 2009	Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 2 Block digestion and steam distillation method (<i>first revision</i>)
IS/ISO 6492 : 1999	Animal feeding stuffs — Determination of fat content
IS/ISO 6865 :	Animal feeding stuffs — Determination of crude fibre content — Method with

*IS No.**Title*

2000

intermediate filtration

14826 :
2021/ISO
5985 : 2002Animal feeding stuffs —
Determination of ash insoluble in
hydrochloric acid (*first revision*)IS/ISO
14718 :
1998Animal feeding stuffs —
Determination of aflatoxin B₁
content of mixed feeding stuffs —
Method using high-performance
liquid chromatographyISO 17375
: 2006Animal feeding stuffs —
Determination of aflatoxin B₁**3 DESCRIPTION**

The solvent extracted nigerseed oilcake (meal) shall be obtained by extraction of oil by means of a solvent from nigerseed oilcake. The meal shall have been subjected to heat and steam treatment under controlled and regulated conditions so as to remove traces of solvent.

4 REQUIREMENTS**4.1 General**

The material shall be in the form of either flakes or powder. It shall be free from rancidity, adulterants, insect or fungus infestation and from musty odour.

4.2 Solvent for Extraction

Only hexane of food grade conforming to IS 3470 shall be used for extracting oil from nigerseed oilcake.

4.3 The material shall also conform to the requirements prescribed in Table 1.

Table 1 Requirements for Solvent Extracted Nigerseed Oilcake (Meal) as Livestock Feed Ingredient
(Clauses 4.3)

SI No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	9.0	4 of IS 7874 (Part 1)
ii)	Crude protein ($N \times 6.25$), percent by mass, <i>Min</i>	35.0	IS/ISO 5983 (Part 1)* or IS 5983 (Part 2)
iii)	Crude fat, percent by weight, <i>Max</i>	1.0	IS/ISO 6492
iv)	Crude fibre, percent by mass, <i>Max</i>	18.0	IS/ISO 6865
v)	Acid insoluble ash, percent by mass, <i>Max</i>	1.5	Annex A of IS 1712 or IS 14826*
vi)	Castor husk	Absent	11 of IS 7874 (Part 1)
vii)	<i>Mahua</i> oilcake	Absent	12 of IS 7874 (Part 1)
viii)	Aflatoxin B ₁ , ppb, <i>Max</i>	20.0	IS/ISO 14718* or ISO 17375 or AOAC 2003.02

NOTES

1 The values specified for requirements at SI No. ii) to viii) are on moisture-free basis.

2 In case of dispute, the test methods given above and wherever indicated by '*' shall be the referee method.

3 For crude fibre, the manual method given in IS/ISO 6865 shall be the referee method.

- d) Net mass in kg;
- e) Date of packing;
- f) Best before date in month & year format; and
- g) Any other requirements as specified under the *Legal Metrology (Packaged Commodities) Rules*, 2011.

5 PACKING AND MARKING

5.1 Packing

Unless otherwise agreed to between the purchaser and the manufacturer, the material shall be packed in clean and sound jute or HDPE bags. The mouth of each bag shall be either machine-stitched or rolled over and hand-stitched.

5.2 Marking

5.2.1 Each bag shall be legibly and indelibly marked with the following information:

- a) Name of the material;
- b) Name and address of the manufacturer;
- c) Batch or code number;

5.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.

6 SAMPLING

Representative samples of the material for ascertaining conformity to this standard shall be drawn according to the method prescribed in Annex H of IS 2052.

7 TESTS

7.1 Tests shall be carried out as prescribed in col (4) of Table 1.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Animal Husbandry, Feeds and Equipment Sectional Committee, FAD 05

<i>Organization</i>	<i>Representative(s)</i>
In Personal Capacity (Former Director, Indian Veterinary Research Institute, Izzatnagar)	DR R. K. SINGH (Chairman)
All India Poultry Breeders Association, New Delhi	DR. A. K. RAJPUT
Animal Welfare Board of India, Faridabad	DR PRACHI JAIN DR DEBALINA MITRA (<i>Alternate</i>)
Association of Indian Pet Food Manufacturers, New Delhi	DR AKANKSHA SINGH SHRI MANISH SINGH (<i>Alternate</i>)
Centre for Science and Environment, New Delhi	SHRI AMIT KHURANA
Centre of Analysis and Learning in Livestock and Food, Anand	DR RAJESH NAIR DR RAJEEV CHAWLA (<i>Alternate</i>)
Chhattisgarh Kamdhenu Vishwavidyalaya, Raipur	DR SANJAY SHAKYA DR MANOJ KUMAR GENDLEY (<i>Alternate</i>)
Compound Livestock Feed Manufacturers Association of India, Navi Mumbai	MS CHANDRIKA VENKATESH SHRI SURESH DEORA (<i>Alternate</i>)
CSIR - Central Drug Research Institute, Lucknow	DR D. S. UPADHYAY DR DHANANJAY HANSDA (<i>Alternate</i>)
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Federation of Indian Animal Protection Organizations, New Delhi	MS SIRJANA NIJAR MS VARNIKA SINGH (<i>Alternate</i>)
Food Safety and Standards Authority of India, New Delhi	DR K. ABIRAMI MS MANPREET KOUR (<i>Alternate</i>)
Guru Angad Dev Veterinary and Animal Sciences, University, Ludhiana	DR J. S. LAMBA DR JASMINE KAUR (<i>Alternate</i>)
ICAR-Central Avian Research Centre, Bareilly	DIRECTOR CARI DR S. K. BHANJA (<i>Alternate</i>)
ICAR-Central Institute for Research on Buffaloes, Hisar	DR P. C. LAILER DR AVIJIT DEY (<i>Alternate</i>)

<i>Organization</i>	<i>Representative(s)</i>
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ICAR-Indian Veterinary Research Institute, Izzatnagar	DR A. K. VERMA
ICAR-National Research Centre on Equines, Hisar	DR S. C. MEHTA DR R. A. LEGHA (<i>Alternate</i>)
ICAR-National Research Centre on Pig, Guwahati	DR KESHAB BARMAN DR SANTANU BANIK (<i>Alternate</i>)
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National Dairy Research Institute, Karnal	DR NITIN TYAGI DR SACHIN KUMAR (<i>Alternate</i>)
National Egg Coordination Committee, New Delhi	SHRI AJIT SINGH SHRI BHAGWATI SINGH (<i>Alternate</i>)
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